Herpetile Survey Report

USFWS - Benton Lake NWR

October 13, 2006

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Introduction

A preliminary survey was conducted to investigate the species occurrence and relative abundance of herpetiles on Benton Lake NWR (BLNWR). A few species of concern (*Spea bombifrons, Bufo boreas, B. cognatus, Rana pipiens, Phrynosoma hernandesi, and Heterodon nasicus*) have been sighted or are thought to inhabit the refuge. However, only incidental sightings have been documented and no organized herp studies have been conducted. Large gaps of information and knowledge exist in the scientific community regarding reptiles and amphibians in Montana and the world (Maxell et al., 2003). The National Wildlife Refuge System has a direct role in providing habitat for a wide range of species and maintaining biodiversity (USFWS 1999). Data will be stored electronically and hard copies filed at BLNWR, and will also be shared with Montana FWP, and the Montana Natural Heritage Program.

Methods

Three pitfall arrays and cover board structures were placed in a variety of different habitat types; in a shelterbelt on an upland native grassland (111°23'36.49"W, 47°40'54.40"N), on a levee next to a canal (111°20'51.24"W, 47°40'59.46"N), and in a dry canyon bottom (111°16'5.95"W, 47°37'19.30"N). The pitfall arrays consisted of three 15' arms of 18" aluminum flashing in a "Y" shape with 2-gallon plastic buckets at each end of the "Y" and also one in the middle. A small length of twine was lowered into each bucket to allow non-target taxa to climb out, and water was also added to each bucket after a fatality was recorded. Also, at each array a 3'x3' plywood coverboard was placed on the ground approximately 10m away in a random direction.

Trapping periods were 4 days in length with traps opened on Monday mornings, and were checked daily at varying times. The first trapping period was August 7-11, and the second was August 28-September 1. In addition to the traps, visual searches which also are very effective (Crosswhite et al., 1999) were conducted for 5 minutes in the area of each trap configuration. Date, time, species, and length were recorded for all herps caught and photos were taken. Since this was not a detailed statistical study, animals were not marked in anyway to detect recaptures.

Results

There were no animals observed under the coverboards or during the timed searches. The results in the following tables were all obtained by the pitfalls. Also, when the shelterbelt pitfall was opened on 08/28/2006, two Tiger Salamanders (*Ambystoma tigrinum)* were discovered dead due to a cover being blown off one of the buckets.

Trapping Period 1

Shelterbelt:

Date	Time Checked	Species Caught	Length
08/08/2006	0830	Unknown Vole Deer Mouse	
08/09/2006	1655	None	
08/10/2006	1605	None	
08/11/2006	1550	None	

Levee:

Date	Time Checked	Species Caught	Length
08/08/2006	0815	None	
08/09/2006	1645	Unknown Vole (dead)	
08/10/2006	1550	None	
08/11/2006	1540	Tiger Salamander (dead)	8.5”

Canyon:

Date	Time Checked	Species Caught	Length
08/08/2006	0930	None	
08/09/2006	1615	Unknown Vole (dead)	
08/10/2006	1530	None	
08/11/2006	1515	None	

Trapping Period 2

Shelterbelt:

Date	Time Checked	Species Caught	Length
08/29/2006	1515	None	
08/30/2006	1355	None	
08/31/2006	1510	4 Tiger Salamanders	7”, 7”, 6”, and 6”
09/01/2006	1120	4 Tiger Salamander	7”, 7”, 6”, and 6”

Levee:

Date	Time Checked	Species Caught	Length
08/29/2006	1530	None	
08/30/2006	1340	Unknown Shrew (dead)	
08/31/2006	1530	7 Tiger Salamanders	9”, 2-7”, and 4-6”
09/01/2006	1145	2 Tiger Salamander	8” and 7”

Canyon:

Date	Time Checked	Species Caught	Length
08/29/2006	1430	None	
08/30/2006	1300	None	
08/31/2006	1435	None	
09/01/2006	1225	None	

Discussion

Tiger salamanders were the only herp caught. While it was expected that these would be caught, it was surprising that nothing else was. There were numerous incidental observations of snakes on the refuge throughout the summer, especially along the dikes and levees, yet none were observed under the coverboards. Most of these observations were made earlier in the summer however. The lateness in the summer of the two trapping periods was not planned, however difficulties obtaining the flashing delayed installation. Adding more trapping periods total and earlier in the summer or spring would be beneficial. Trapping later may also still be viable as well as incidental observations of tiger salamanders moving overland continued well into September.

An aquatic sampling protocol would be highly valuable as well since no frogs or toads were caught, but inhabit the numerous wetlands on the refuge. It was also surprising that no reptiles were encountered in the area of the canyon array. The rocky ledges appeared to be desirable habitat to lizards and snakes, however none were caught or observed. A rattlesnake den was known to exist in the canyon, but its location was known by staff that are no longer on the refuge.

References

Crosswhite DL, Fox SF, and Thill RE. 1999. Comparison of Methods for Monitoring Reptiles and Amphibians in Upland Forests of the Ouachita Mountains. *Proceedings of the Oklahoma Academy of Science*. **79**:45-50.

Maxell BA, Werner JK, Hendricks P, and Flath DL. 2003. Herpetology in Montana. Northwest Fauna No. 5. Society for Northwestern Vertebrate Biology. Pg. 1.

USFWS. 1999. Fulfilling the Promise. USFWS Washington D.C.

Appendix: Photos

Levee array:

Shelterbelt array:

08/11/2006 Levee (dead):

08/31/2006 Shelterbelt:

08/31/2006 Shelterbelt:

08/31/2006 Shelterbelt:

08/31/2006 Shelterbelt:

08/31/2006 Levee:

08/31/2006 Levee:

08/31/2006 Levee:

09/01/2006 Shelterbelt:

09/01/2006 Shelterbelt:

09/01/2006 Levee:

09/01/2006 Levee: